

STUDIES ON THE CROSSABILITY OF LUPINUS
TEXENSIS AND LUPINUS SUBCARNOSUS

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During the period from March 17 to April 7, 1956, attempts were made to hybridize *Lupinus subcarnosus* with *L. texensis*. The work was begun just after *L. subcarnosus* began flowering. This was about two weeks later than *L. texensis* under the experimental conditions. The plants were most vigorous at this time as they had recovered from the shock of transplanting but had not yet started to decline in vigor. However, this vigorous condition could not be maintained. This factor doubtlessly was in part responsible for the low percentage of pods set from the various crosses and selfs. This is particularly true of the intraspecific crosses and selfings attempted on *L. texensis*, since these plants were the last to be worked upon and by that time they were no longer in optimum health.

The same emasculation and pollination techniques were employed as had previously proved successful on hybridization studies on the genus *Lotus* (Erbe, Master's Thesis, University of Vermont, 1955).

Stock plants of *L. subcarnosus* were obtained from a population occurring on sandy soil about ten miles west of Bastrop, Texas. Plants of *L. texensis* were obtained from a population occurring on the University of Texas campus in black clay.

On the basis of the present study, the tentative conclusion was that the two species are effectively isolated genetically. Certainly, they do not hybridize readily when subjected to experimental emasculation and pollination techniques. These experimental results as shown in Table 1 agree with the observation, presented by Turner (Madroño 14, p. 16), that there is no evidence of hybridization occurring when the two species grow sympatrically.

TABLE 1. RESULTS OF ATTEMPTED CROSSES IN LUPINUS

	No. of florets	No. of pods	Per cent of pods
Interspecific crosses:			
<i>L. texensis</i> × <i>L. subcarnosus</i>	52	0	0
<i>L. subcarnosus</i> × <i>L. texensis</i>	25	0	0
Intraspecific crosses:			
<i>L. subcarnosus</i> × <i>L. subcarnosus</i>	11	3	14
<i>L. texensis</i> × <i>L. texensis</i>	10	0	0
Selfed:			
<i>L. subcarnosus</i>	45	18	40
<i>L. texensis</i>	44	6	14

During the course of the study the writer bagged several inflorescences that were not used in the hybridization studies. Not a single floret of any of these inflorescences produced a pod. In addition, only one pod developed on the unbagged inflorescences of approximately fifteen other plants of *L. texensis*. Bee activity was almost non-existent; only one bee was

observed "working" an inflorescence. That particular inflorescence subsequently produced the only pod that developed on a *L. texensis* plant without experimental manipulation. It appears evident that pods are not produced by florets of *L. texensis* unless they have been "worked" by bees or man. Several of the unbagged inflorescences of *L. subcarnosus* set a few pods.

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NEW NORTH AMERICAN ANDROPOGONS OF SUBGENUS AMPHILOPHIS AND A KEY TO THOSE SPECIES OCCURRING IN THE UNITED STATES¹

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The Old and New World andropogons of the subgenus *Amphilophis* comprise a relatively distinct group, recognized as a separate genus by many systematists including O. Stapf, C. E. Hubbard, A. Camus, J. T. Henrard, and S. T. Blake. Both *Amphilophis* Nash and *Bothriochloa* Kuntze have been proposed as generic names for the species comprising this subgenus, with *Bothriochloa* (1891) antedating *Amphilophis* (1901). The name *Amphilophis* was first used by Trinius as a section name under *Andropogon*. Included in the section were a number of species belonging to *Vetiveria*, *Sorghastrum*, and *Sorghum*, as well as *Andropogon saccharoides* and its allies. Hackel, in his monograph (1889), took up *Amphilophis* as a subgenus name for the *A. saccharoides* group. *Bothriochloa* never has been officially published as a subgeneric name.

The *Amphilophis* andropogons are distinguished primarily on the basis of inflorescence characters. The pedicels, and at least the terminal rachis joints, have thickened margins and a medial groove or a broad thin membranous central area. The inflorescence characteristically is a leafless terminal panicle, with several to numerous racemose branches. In a few species there are as few as two or three branches per inflorescence.

The following new species and new name combinations are proposed in *Andropogon* rather than in *Bothriochloa* primarily to conform with the standard United States treatments of the genus (Hitchcock, 1951; Swallen, 1951; Gould, 1951; Gleason, 1952; Harrington, 1954). The Latin diagnoses have been kindly supplied by Dr. Lloyd Shinnery of Southern Methodist University. Mr. Jason R. Swallen of the United States National Museum has aided in clarifying the relationships of generic and subgeneric names. The writer is indebted to the curators of the herbaria of

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